

Our Reference: CWL-101-A

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant: William A. Cox
Serial Number: 09/863,181
Filing Date: May 23, 2001
Examiner/Art Group Unit: Peterson, Kenneth E./3724
Title: ROTARY DIE MODULE

APPEAL BRIEF

Board of Patent Appeals and Interferences
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Please enter the following Appeal Brief in the appeal filed May 14, 2007.

REAL PARTY IN INTEREST

The real party in interest is the applicant, William A. Cox.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

STATUS OF CLAIMS

Claims 1, 3-9, 12-13, 15-16, 37, 39-40, 46-47, 49-50, 52, and 58 are currently pending. Claims 2, 10-11, 14, 17-36, 38, 41-45, 48, 51, 53-57, and 59 have been cancelled without prejudice. Claims 3-9, 12, 37, 39-40, and 46 have been withdrawn from consideration.¹ Claims 1, 47, and 49 stand rejected under 35 U.S.C. §102(b) as being anticipated by Gautier (U.S. Pat. No. 4,770,078). Claims 1, 13, 15-16, 47, 49-50, 52, and 58 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Gautier '078 in view of Keston (U.S. Pat. No. 4,452,116). The rejections are final.

STATUS OF AMENDMENTS

An After Final Amendment was filed on May 14, 2007 in an attempt to simply the issues for appeal. Claims 1, 47, and 49 were being cancelled without prejudice to remove the issue of the rejection under 35 U.S.C. §102(a) from the appeal. Claim 50 (previously dependent from claim 49) was rewritten in independent form including all of the limitations of the base claim and any intervening claims for purposes of appealing the rejection under 35 U.S.C. §103(a). Withdrawn claim 4 was being amended to depend from claim 58 (on appeal). Withdrawn claims 3, 7-9, 37, 39, and 46 were being cancelled without prejudice to

¹In the office action dated May 6, 2004, the Examiner limited prosecution to no more than 4 independent claims and 12 dependent claims (for a total of 16 claims), even though the applicant had already paid for examination of 7 independent claims and 31 total claims at that time. The Examiner's authority for this highly unusual practice is unclear (although the Examiner relied on MPEP §2173.05(n), which also indicates that this issue is appealable). It is noted that no refund of filing fees previously paid appears to be authorized under these circumstances. The Board's comments on the relevant parameters of permissible use for this section of the MPEP would be welcomed for future guidance and reference. Withdrawn claims 4-6, 12, and 40 have not been cancelled, so the Board can evaluate whether the Examiner's imposition of a sixteen claim limit was justified under issue 1 identified and argued below.

simplify the issues on appeal. The Examiner refused entry of this amendment for purposes of appeal, because the dependency of withdrawn claim 4 from claim 58 (on appeal) raised new issues requiring further search and/or consideration.

A Second After Final Amendment is submitted with this appeal brief. In the second after final amendment, claims 1, 47, and 49 are being cancelled without prejudice to remove the issue of the rejection under 35 U.S.C. §102(a) from the appeal. Claim 50 (previously dependent from claim 49) is being rewritten in independent form including all of the limitations of the base claim and any intervening claims for purposes of appealing the rejection under 35 U.S.C. §103(a). Withdrawn claim 4 is unchanged (although it is applicant's intent to depend claim 4 from claim 58 after receiving an indication that this claim is allowable). Withdrawn claims 3, 7-9, 37, 39 and 46 are being cancelled without prejudice to simplify the issues on appeal. Since this Second After Final Amendment eliminates the basis for rejection identified in the Advisory Action (based on the comments of the Examiner in the Advisory Action), the remainder of this appeal brief is written as if the Second After Final Amendment has been entered. Therefore, only claims 13, 15-16, 50 (as amended), 52, and 58 are subject to appeal of the rejection under 35 U.S.C. §103(a).

SUMMARY OF THE CLAIMED SUBJECT MATTER

Claim 13 recites an improved rotary die apparatus 10 having a first rotary die 110 with a first axis of rotation 111 and a second rotary die 126 with a second axis of rotation 127, the second axis of rotation parallel to the first axis of rotation. (Specification paras. 33 and 43, Fig. 1). The apparatus further having a frame 12 including a base 14, a cover 100 opposite the base, a pair of opposing cross members 54 positioned transverse to the first 111 and second 127 axis of rotation, the cross members 54 are moveable between the base and the cover. (Paras. 33 and 38, Fig. 1). Pressure members 72 operably engage the cover 100 and the cross members. (Para. 40, Figs. 1, 3 and 4). The improvement comprising the frame having a low speed mode of operation below 600 linear feet per minute. (Paras. 33 and 54, Figs. 1 and 2). The frame 12 further including four elongate columns 20, each column having a first end 22 and a second end 24, the first end 22 of each column mounted to the base 14 such that the columns are positioned parallel and spaced from one another, and the second end 24 of each column mounted to the cover, each column defining a vertically

extending length, the columns 20 having a uniform cross section along the length between the base and the cover. (paras. 35-37, Figs. 1 and 2). A die support kit is operably engagable with the frame 12, the die support kit for low speed mode of operation consisting of a first modular die support 38 and a second modular die support 66, the first modular die 38 support having a first bearing 39 and a second bearing 40 positioned spaced from one another with respect to the first axis of rotation 111, each bearing mounted directly on the base 14 in a location spaced from the columns 20, each bearing having at least two rollers 44, each roller 44 having an axis of rotation 46 substantially parallel to one another and angularly spaced from one another with respect to the first axis of rotation 111, the rollers 44 in rolling engagement and maintaining the first rotary die 110 in a stationary rotary position upwardly, horizontally transverse to the first axis of rotation 111 and longitudinally along the first axis of rotation 111 with respect to the base. (Paras. 47-48, Figs. 1, 2 and 10). The rollers 44 in operable engagement with a raised radial flange 122 on each of a first and a second end of the first rotary die 110 to limit linear translation of the first rotary die along the first axis of rotation 111. (Paras. 45, 48, and 54-55, Figs. 1, 2 and 10). The second modular die support 66 having a first bearing 67 and a second bearing 68 positioned spaced from one another with respect to the second axis of rotation 127, each bearing mounted to one of the cross members 54 spaced from the columns 20 in rolling engagement with the second rotary die 126. (Paras. 47, 49, Fig. 1).

Claim 50 recites a modular rotary die apparatus 10 having a first rotary die 110 with a first axis of rotation 111 and a second rotary die 126 with a second axis of rotation parallel to the first axis of rotation 127 comprising a frame 12 having a low speed mode of operation below 600 linear feet per minute, the frame including a base 14, a plurality of independent elongate columns 20, each column having a first end 22 and second end 24 defining a path of travel 26 along a length thereof. (Paras. 33, 35 and 54, Figs. 1 and 2). The first end 22 of each column 20 mounted to the base 14 in spaced relation to one another, a cross member 54 engaged with at least two of the plurality of columns 20 for movement of the entire cross member along the path of travel 26, and a die support kit operably engagable with the frame 12, the die support kit for low speed mode of operation including a first modular die support 38 for low speed mode of operation below 600 linear feet per minute, the first modular die support 38 mounted to the base 14 spaced from the columns 20 in rolling

engagement with the first rotary die 110. (Paras. 33, 35-39, 47-48, 54-55, Figs. 1 and 2). The first modular die support 38 maintaining the first rotary die 110 in a stationary rotary position with respect to the base 14, and a second modular die support 66 for low speed mode of operation mounted to the cross member 54 spaced from the columns 20 in rolling engagement with the second rotary die 126 to maintain the second rotary die 126 in a stationary rotary position in a horizontally transverse direction with respect to the second axis of rotation 127, wherein each of the first 38 and second 66 modular die supports includes a first bearing assembly 39/67 and a second bearing assembly 40/68 positioned in longitudinally spaced locations along the axis of rotation of the first 110 and the second rotary dies 126, each of the first 39/67 and the second bearings 40/68 having at least two rollers 44 with axes of rotation substantially parallel to one another and each roller angularly spaced from one another with respect to the axis of rotation of the corresponding rotary die. (Paras. 47-50, 54-55, Figs. 1, 2 and 6). The first rotary die 110 includes a first end surface 115 and an opposite second end surface 116, the first rotary die having a radially raised flange 122 adjacent to the first and second end surfaces, the first and the second rollers 44 operably engage the corresponding raised radial flange 122 along the first axis of rotation 111 to limit linear translation of the first rotary die along the first axis of rotation. (Paras. 43-45, 47-48, Figs. 1, 2 and 6).

Claim 58 recites a modular rotary die apparatus 10 having a first rotary die 110 with a first axis of rotation 111 and a second rotary die 126 with a second axis of rotation 127 parallel to the first axis of rotation comprising a frame 12 having a low speed mode of operation below 600 linear feet per minute. (Paras. 33, 43, 54, Figs. 1 and 2). The frame including a base 14, a plurality of elongate columns 20 having a first end 22 mounted to the base 14 and a second end 24, a cross member 54 positioned opposite the base operably engaged with at least two of the columns 20 adjacent the second ends 24, and a die support kit operably engagable with the frame, the die support kit for low speed mode of operation including a first modular die support 38 mounted to the base 14 spaced from the columns 20 and consisting of a first bearing member 39 and a second bearing member 40 positioned in longitudinally spaced locations along the axis of rotation 111 of the first rotary die. (Paras. 33, 35-39, 47, 54-55, Figs. 1 and 2). Each bearing member 39, 40 including at least two rollers 44 with axes of rotation located in angularly spaced positions with respect to and

parallel to the axis of rotation 111 of the first rotary die 110, the first 39 and second 40 bearing members in rolling engagement with the first rotary die and maintaining the first rotary die in a stationary rotary position with respect to the base through operable engagement of the rollers with raised radial flanges 122 located on opposite longitudinal ends of the first rotary die. (Paras. 47-48, Figs. 1 and 2). A second modular die support 66 mounted to the cross member 54, the second modular die support 66 consisting of a first bearing member 67 and a second bearing member 68 positioned in longitudinally spaced locations along the axis of rotation 127 of the second rotary die 126, each bearing member including at least two rollers 44 with axes of rotation located in angularly spaced positions with respect to and parallel to the axis of rotation 127 of the second rotary die 126, the first and second bearing members in rolling engagement with the second rotary die 126 and maintaining the second rotary die in a stationary rotary position with respect to the base 14 through operable engagement of the raised radial flanges 122 on the first rotary die 110 with longitudinal ends of the second rotary die 126. (Paras. 45, 47, Figs. 1, 2 and 6).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Issue 1: Was the rejection under 35 U.S.C. §112, 2nd paragraph in the Office Action dated May 6, 2004 improper?

Appellant Answers: Yes

Examiner Answers: No

Issue 2: Was the rejection under 35 U.S.C. §103(a) in the Office Action dated February 12, 2007 improper?

Appellant Answers: Yes

Examiner Answers: No

Issue 3: Did the Examiner's fail to give adequate consideration to the Declarations under 37 C.F.R. §1.132 in the Office Actions dated August 20, 2003 and February 12, 2007?

Appellant Answers: Yes

Examiner Answers: No

ARGUMENT

Issue 1

Appellant traversed the Examiner's requirement under M.P.E.P. § 2173.05(n) as improper and unwarranted. Appellant asserted that the pending independent claims were materially distinct from one another, and that the pending dependent claims were equally distinct on their own merits. It is believed that the Examiner failed to met his burden to support the § 112 second paragraph rejection based on multiplicity, since no explanation or examples of the "shades of meaning and possible interpretations" or the stated concern of "too much chance for confusion and error" is provided. See In re Flint, 162 U.S.P.Q. 228, 230 (C.C.P.A. 1969) (Neese, J. concurring relying in part on In re Savage, 45 U.S.P.Q. 155, 160 (C.C.P.A. 1940)).

Pending independent claims 12 and 40 vary in the claimed structure and functional and spacial relationships. Independent claim 12 claims the rotary dies themselves including raised radial flanges on the first rotary die. By comparison, claim 13 is an improvement claim wherein the first modular die support includes bearings having individual rollers and additional spacial relationships between the raised radial flange and first die support roller bearings not included in claim 12. Independent claim 40 provides that the first and second modular die supports consist of the individual rollers to support both rotary dies and removes directly claiming the dies distinguishing it from claim 12. Appellant further asserts that the claims were clearly presented and were not confusing as suggested. Appellant further contests the total number of claims, set at 16, by the Examiner as unduly limiting. Appellant responded to each of the Examiner's rejections on new art and was denied examination of these amendments and advancement of all of the claims. It is respectfully submitted that all of the pending claims warranted continued prosecution under the above

statements, history of prosecution of the case and fees paid by the appellant. Reconsideration by the Board of Appeals is requested.

Issue 2

In the office action dated, February 12, 2007, claims 13, 15-16, 50, 52, and 58 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Gautier (U.S. Patent No. 4,770,078) in view of Kesten (U.S. Pat. No. 4,452,116). The Examiner asserts that it would have been obvious to one of ordinary skill in the art to have modified Gautier '078 by adding a radial flange to the dies that could laterally engage the bearings (13, 16) and the opposing die, as is generically known and made obvious by Kesten, in order to enhance longitudinal stability of the dies and thus make more accurate cuts in the workpiece. It is submitted that the combination of Gautier in view of Kesten fails to anticipate, teach or suggest the invention as recited in the pending claims and is an improper combination.

With respect to claims 13 and 15-16, the Gautier '078 reference does not anticipate, teach, or suggest the improvement of a frame for a low speed mode of operation below 600 linear feet per minute in combination with a die support kit for low speed operation. The die support kit for low speed mode of operation consisting of a first modular die support and a second modular die support, the first modular die support having first and second bearings spaced longitudinally from one another and mounted directly to the base in locations spaced from the columns, each bearing having at least two rollers, each bearing in operable engagement with a raised radial flange associated with one of the first and second ends of the first rotary die to limit linear translation of the first rotary die along the first axis of rotation, and the second modular die support having a first and second bearings, each bearing spaced from one another longitudinally and mounted to the cross members as recited in claim 13.

Applicant's innovative elimination of all bearing blocks (sometimes referred to as cylindrical roller bearings or journal block bearings) held in the frame rigid side plates is confirmed by the Examiner's own primary reference in Gautier. The Gautier '078 reference teaches elimination of only two of the four bearing blocks in prior art rotary dies and necessarily relies on the remaining set of bearing blocks (3 and 4 in Figure 4), one for each die roll, which in themselves provide the sole restraint for the die rolls along the rotational

axes 1A and 2A and provide the “primar[y]” resistance to movement of the die rolls in the transverse direction. (Gautier column 3, lines 34-38)(compare Gautier prior art figure 1 to figure 4). Gautier does not suggest the use of a raised radial flange on one of the rotary dies to eliminate the need, for example the bearing 4, in the side plate to necessarily restrain the die from movement in that direction.

The addition of Kesten ‘116 to the disclosure of Gautier ‘078 does not overcome these deficiencies and the need for bearing blocks 3 and 4 in the frame side plate in the Gautier ‘078 reference and adds nothing to the teachings in Gautier but added cost and complexity as identified by Declarant Pfaff below. Notably, Kesten, like Gautier, similarly relies on bearing block members 44 to restrain the principal lower die/anvil roll 12. (Kesten figure 2). At best, the Kesten ‘116 reference teaches a shaftless die roll 16, where bearings 76’, 80’ have flanges 88 to cooperatively support the die roll laterally and transversely. (column 7, lines 10-32 and column 7, line 60 – column 8, line 11). The Examiner’s combination of the Kesten annular flange, to either supplant the Gautier bearing blocks 3 and 4, or in addition to Gautier bearing blocks 3 and 4, for purposes of simplifying or improving restraint of the dies rolls is improper as Gautier expressly relies on use of bearing blocks 3 and 4 in the frame side plate to provide the “primar[y]” resistance to die roll movement transverse to the axes of rotation. (Gautier column 3, lines 30-38).

With respect to claims 50 and 52, the Gautier ‘078 reference does not anticipate, teach, or suggest a frame for a low speed mode of operation below 600 linear feet per minute for low speed mode of operation including a die support kit with a first modular die support and a second modular die support, each of the first and second modular die supports including a first bearing assembly and a second bearing assembly positioned in longitudinally spaced locations along the axis of rotation of the first and second rotary dies, each of the first and second bearings having at least two rollers with axis of rotation substantially parallel to one another and each roller angularly spaced from one another with respect to the axis of rotation of the corresponding rotary die, where the first rotary die has a first end surface and an opposite second end surface, the first rotary die having a radially raised flange adjacent to the first and second end surfaces, the first and second rollers operably engaging the corresponding raised radial flange along the first axis of rotation to

limit linear translation of the first rotary die along the first axis of rotation as recited in claim 50, and the second rotary die including a first end and a opposite second end positioned between and operably engaged with the raised radial flange along the second axis of rotation to limit longitudinal translation of the second rotary die with respect to the first rotary die as recited in claim 52.

The Gautier '078 reference teaches rollers 13, 16 and bearings 3,4 supported by (not spaced from) the columns of frame 7 (column 3, lines 19-20), and does not suggest supporting the first and second rotary dies in three-dimensional stationary rotary positions by operable interaction between the first and second modular die supports having first and second bearing assemblies as recited in claim 50 and 52. The Gautier '078 reference teaches that bearing 4 primarily will be resisting horizontal forces perpendicular to the plane of the axes 1A and 2A (column 3, lines 34-38), and does not suggest the use of a raised radial flange on either rotary die to eliminate the need for the bearing 4. As argued above, Gautier teaches elimination of only one of the bearing sets in the side frame and relies on bearing blocks 3 and 4 to principally restrain the die rolls. The addition of the Kesten '116 in combination with Gautier '078 does not overcome the deficiencies of the Gautier '078 reference, and accordingly does not teach or suggest the specific structural configuration set forth in claims 50 and/or 52.

The Examiner states that there is nothing in the claims that precludes a reference from having additional bearings. This interpretation ignores the radial flange elements on either radial die as recited in the pending claims. Reversal of the Examiner's rejection is requested.

With respect to claim 58, the Gautier '078 reference does not anticipate, teach, or suggest a frame for a low speed mode of operation below 600 linear feet per minute in combination with a die support kit for low speed mode of operation including a first modular die support consisting of a first bearing member and a second bearing member, each bearing member of the first modular die support including at least two rollers maintaining the first rotary die in a stationary rotary position through operable engagement of the rollers with raised radial flanges located on opposite longitudinal ends of the first rotary die, and a second modular die support consisting of a first bearing member and a second bearing member, each

bearing member of the second modular die support including at least two rollers maintaining the second rotary die in a stationary rotary position through operable engagement of the raised radial flanges located on opposite longitudinal ends of the first rotary die with the longitudinal ends of the second rotary die as recited in claim 58. The Gautier '078 reference teaches rollers 13, 16 and bearings 3, 4 supported by (not spaced from) the frame 7 side plate or columns (column 3, lines 19-20), and does not suggest supporting the first and second rotary dies in three-dimensional stationary rotary positions by operable interaction between the first and second modular die supports consisting of first and second bearing members as recited in claim 58. The Gautier '078 reference necessarily relies on bearing blocks 3 and 4 in the side frame and expressly teaches that bearing 4 primarily will be resisting horizontal forces perpendicular to the plane of the axes 1A and 2A (column 3, lines 34-38), and does not suggest the use of a raised radial flange on the either rotary die to eliminate the need for the bearing 4.

The addition of Kesten '116, discussed in greater detail above, to Gautier '078 does not overcome the deficiencies of the Gautier '078 reference, and accordingly does not teach or suggest the specific structural configuration set forth in claims 50, 52, and 58. The Examiner states that there is nothing in the claims that precludes a reference from having additional bearings. However, this interpretation ignores the closed ended transition "consisting of" used for the die support/ bearing elements of the pending claims. Reconsideration of the Examiner's rejection is requested.

Respecting Appellant's use of the "consisting of" language for the die support kit in claim 13 and for the first and second modular die supports in claim 58, in the Advisory Action dated May 21, 2007, the Examiner states that: "[] this reveals the trickiness of using 'consisting of' language), just because the 'die support kit' doesn't have bearing blocks between the columns, doesn't mean that some other named part of the device can't have bearing blocks between the columns." It is submitted that this overbroad interpretation of the claim language effectively reads out the "consisting of" limitation, is against long-standing Federal Circuit precedent and is unsustainable. As stated in MPEP §2111.03, the transitional phrases "comprising", "consisting essentially of" and "consisting of" define the scope of a claim with respect to what unrecited additional components or steps, if any, are excluded

from the scope of the claim. “The phrase ‘consisting of’ signifies restriction and exclusion of unrecited steps or components.” Conoco, Inc. et al. v. Energy & Environmental Int’l, L.C. et al., 460 F.3d 1349, 1360 (Fed. Cir. 2006)(citing M.P.E.P. § 2111.03).

The Federal Circuit has set forth a straight forward inquiry where “consisting of” language is used in a phrase in the body of the claim.

‘Consisting of’ is a term of patent convention meaning that the claimed invention contains only what is expressly set forth in the claim. However, while ‘consisting of’ limits the claimed invention, it does not limit aspects unrelated to the invention. It is thus necessary to determine what is limited by the ‘consisting of’ phrase.”

Conoco, 460 F.3d at 1360. More specifically addressing the Examiner’s apparent position that bearing blocks in the side frame can simply be added on by some other component outside of the claimed die support kit (claim 13) or the first and the second modular die supports (claim 58), the Federal Circuit has advised: “We have explained that ‘consisting of’ does not exclude additional components or steps that are unrelated to the invention.” Id. (emphasis added).

Examination of Applicant’s use of “consisting of” language pertaining to the die support kit in claim 13 and the first and second modular die supports in claim 58 fundamentally relate to the structure and bearings that directly support and restrain the first and second die rolls. Applicant’s directed uses of “consisting of” precludes the Examiner from ignoring this claim language by attempting to simply tack on additional bearing blocks or die support structure from “some other named part.” Thus, the Examiner’s basis, which effectively reads out the limiting claim language, is improper and reversal on this basis requested.

Issue 3

It is submitted that the Examiner has failed to give adequate consideration and weight to the Declarations filed in the present application on April 22, 2003 and January 8,

2007, copies of which are attached hereto as EVIDENCE APPENDIX, pages B1-B15. These Declarations set forth specific facts and indicia of non-obviousness which have not been accorded proper consideration and weight by the Examiner. In particular, the declarations set forth that the respective declarants have numerous years of experience in the art, and therefore are properly considered to be experts in the art. Further, and particularly with declarant Pfaff on the references grounding the final rejection, the Declaration sets forth that as an expert in the art, the Declarant would not be taught or suggested the present invention by the references as combined in the Examiner's rejection.

Prima facie obviousness is but a procedural mechanism allocating the burdens of going forward and persuasion as between Examiner and Applicant. Once the Applicant makes a showing of facts that rebuts the prima facie case, the prima facie inference disappears. Then the Examiner must consider all of the evidence anew and should not characterize the prima facie case as "strong" or "weak." An expert's affidavit or declaration of firsthand practical knowledge of unsolved needs in the art is evidence of the state of the art. See generally, In re Piasecki, 745 F.2d 1468, 223 USPQ 285 (Fed. Cir. 1984). It is submitted that the Declarations set forth facts and other indicia of non-obviousness and overcome the unsupported assertion of obviousness set forth in the Examiner's rejection of the claims in the present application. If given proper weight and consideration by the Examiner, it is submitted that the Declarations traverse and overcome the Examiner's prima facie obviousness rejection of the claims, requiring the Examiner to come forth with further evidence of obviousness, which has not been done. Therefore, it is respectfully submitted that claims in the present application are allowable over the prior art of record.

A declaration under 37 C.F.R. §1.132 by Alan R. Pfaff was previously submitted to provide the Examiner with an explanation of the teachings of Gautier '078 and Kesten '116 as interpreted by one skilled in the art. As can be seen from a review of the attached declaration, the Gautier '078 and/or Kesten '116 references taken singularly or in any permissible combination, would not teach or suggest to one skilled in the art at the time the invention was made to use only roller bearings mounted to the base for supporting the die in a stationary rotary position, i.e. in three dimensions (x-y-z planes) as recited in independent claims 13 and 58 in combination with a raised radial flange formed on opposite

ends of the first rotary die, and/or the use of flanges on the first rotary die to maintain the second rotary die in longitudinal position as recited in claim 58.

Declarant Pfaff specifically concludes that it is his opinion as one skilled in the art that the technical disclosure of Gautier '078 "is limited to, or requires the use of, one set of journal block bearings 3 and 4 on the drive side to restrain linear movement of the die rolls transverse to the rotational axes" (Pfaff Declaration Para. 22). Pfaff further states that it is his "opinion that the Gautier device requires both the individual rollers 13 and 16 as well as the journal block bearings 3 and 4 and U-shaped frame as shown in Figure 2 to support and restrain the die rolls 1 and 2 in their operational position." (Pfaff Para. 22). Further, Pfaff states that it is his opinion as one skilled in the art that "the Gautier patent relies exclusively on the journal block bearings 3 and 4 and the U-shaped frame to restrain the die rolls 1 and 2 from linear movement along the axis of rotation of the die rolls.

With respect to the addition of the Kesten '116 reference, Pfaff states that there "is no explanation or suggestion in the Gautier patent to use a different method or to employ the use of an annular flange on one of the die rolls to restrain movement along the rotational axes." (Pfaff Para. 25). An "addition of the Kesten circumferential flange 88 to the Gautier die rolls would provide little or no benefit and only add costs and needless complexity to the device" according to Pfaff. (Pfaff Para. 25). Accordingly, in Pfaff's opinion as one skilled in the art, "it would not be obvious ... to add that Kesten feature to the Gautier device." (Pfaff para. 25). Pfaff further points out that the combination of Gautier in view of Kesten does not anticipate, teach or suggest the use of annular flanges on the lower die roll serving a dual purpose in combination with the rollers 44, 48 to restrain both the lower die and, at the same time, the upper die roll along the rotational axes. (Pfaff Para. 26). These features are specifically set forth and claimed in the pending claims of the present application. The Board's consideration of the Pfaff Declaration under 37 C.F.R. §1.132 is requested.

Lastly, Appellant submits that the previously provided William Cox Declaration was not given due consideration and weight with respect to the statements regarding the attributes of the present invention, the commercial success of the inventive device, and other indicia of nonobviousness. Although on references not in issue in the final rejection, Cox generally speaks on the prior art die roll bearing support structure the

Examiner applies in Gautier and as shown in Keston. Specifically, Cox advises of the limitations in prior art cutting die devices' use of heavy, precision-machined side plates used with bearing blocks or cylindrical roller bearings like that used in Gautier (bearings 3 and 4 in frame 7) and Keston (bearing members 44 in frame 22) and the long felt need to improve on the deficiencies in the prior art. (Cox Declaration Paras 3-9 and 13). Cox further provided evidence of commercial success through the sale of 22 of the inventive rotary die devices without formal advertising. (Cox Paras. 14-19). The Examiner did not substantively comment on the merits of these statements in subsequent actions and appears to have wholly disregarded the evidence which is asserted to be improper.

CONCLUSION

At best, the prior art references show components in bits and pieces of the inventive arrangement as claimed in the independent claims. The relevant art recognizes many components and concepts within its domain. Properly focused, the issues center on what would have been obvious to one of ordinary skill in the art at the time of the invention. Obviousness is tested by what the combined teaching of the references would have suggested to those of ordinary skill in the art. Graham v. John Deere Co. of Kansas City, 383 U.S. 1, 15-17 (1966). The Supreme Court recently stated: "a patent composed of several elements is not proved obvious merely by demonstrating that each of the elements was, independently, known in the prior art" and that "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in a way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon the building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known. KSR Int'l. Co. v. Teleflex Inc. et al., 127 S.Ct. 1727, 1741 (2007). In the present case, the Examiner has not met the burdens required and has not properly considered declarations from those skilled in the art.

Approaches to obviousness determinations which focus merely on identifying and tabulating missing elements in hindsight retrospect imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, and, fall victim to the insidious effect of hindsight

syndrome wherein that which only the inventor taught is used against its teacher. W. L. Gore & Assoc v. Garlock, Inc., 721 F.2d 1540, 1553 (Fed. Cir. 1983), KSR, 127 S.Ct. at 1742.

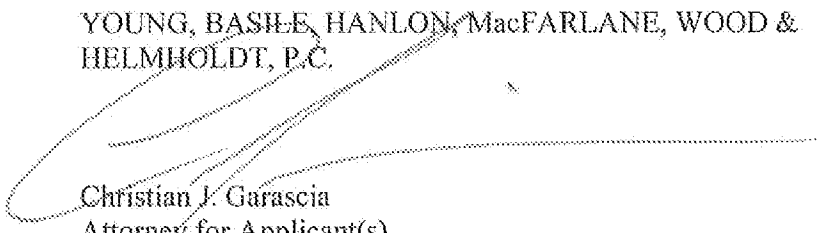
For the reasons stated above, it is respectfully submitted that Appellants' invention as set forth in claims 4-6, 12-13, 15-16, 40, 50, 52 and 58 patentably define over the cited references and are not suggested or rendered obvious thereby. As such, it is respectfully submitted that the Examiner's final rejection of claims 13, 15-16, 50, 52, and 58, and the Examiner's withdrawal from consideration of claims 4-6, 12 and 40, are erroneously based and reversal is respectfully requested.

No oral hearing is requested.

The amount of \$250.00 is authorized to be paid out of our Deposit Account No. 25-0115 to cover the Appeal Brief filing fee. If any additional charges or fees must be paid in connection with the following communication, they may be paid out of our Deposit Account No. 25-0115.

Respectfully submitted,

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APPENDIX INDEX

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CLAIMS APPENDIX

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Claims 1-3. (Cancelled).

4. (Withdrawn) The apparatus of claim 1 wherein the first rotary die further comprises a first end surface and an opposite second end surface, the first die having a radially raised flange adjacent to the first and the second end surfaces.

5. (Withdrawn) The apparatus of claim 4 wherein each of the raised flanges defines a shoulder operably engageable with the corresponding rollers of the first bearing and the second bearing of the first modular die support to limit linear longitudinal translation of the first die along the first axis of rotation.

6. (Withdrawn) The apparatus of claim 5 wherein each of the raised flanges defines a shoulder operably engageable with a corresponding end of the second die to limit linear longitudinal translation of the second die along the second axis of rotation.

Claims 7-11. (Cancelled)

12. (Withdrawn) A rotary die apparatus comprising:

a frame having a base, a plurality of elongate circular columns having a first end and a second end defining a first axis of movement along a length thereof, the first ends of the columns removably mounted with respect to the base and the second ends of the columns removably mounted with respect to a cover, at least one cross member, the cross member movably engageable with respect to at least two of the plurality of circular columns for movement along the first axis;

a first rotary die having a first axis of rotation, the first die having a first end surface and an opposite second end surface, and a raised radial flange adjacent the first and second end surfaces;

a second rotary die having a second axis of rotation positioned in substantially parallel alignment with the first axis of rotation and rollingly engaged with the first die, the second die having a first end surface and an opposite second end surface positioned axially

inward of the radial flanges and operably engaged with the radial flange of the first die to limit linear translation of the second die along the second axis of rotation, the cross member positioned transverse to the second rotary die having the second axis of rotation;

a first modular die support removably mounted directly to the base in a location spaced from the columns, the first die support having a first bearing member and a second bearing member, the second bearing member separated from the first bearing member along the first axis of rotation, the first and second bearing members each having at least two rollers each roller having an axis of rotation substantially parallel to one another and angularly spaced from one another with respect to the first axis of rotation providing exclusive support vertically and horizontally transverse to the first axis of rotation through rolling engagement with the first rotary die, at least one of the first and second bearing members operably engaged with the raised radial flange to limit movement of the first rotary die longitudinally along the first axis of rotation; and

a second modular die support removably mounted directly to the cross member in a location spaced from the columns, the second die support having a first bearing and a second bearing member, the second bearing member separated from the first bearing member along the second axis of rotation, the first and second bearing members each having at least two rollers in exclusive rolling vertical downwardly pressing engagement with the second rotary die, each roller having an axis of rotation substantially parallel to one another and angularly spaced from one another with respect to the second axis of rotation,

13. An improved rotary die apparatus having a first rotary die with a first axis of rotation and a second rotary die with a second axis of rotation, the second axis of rotation parallel to the first axis of rotation, the apparatus having a frame including a base, a cover opposite the base, a pair of opposing cross members positioned transverse to the first and second axis of rotation, the cross members moveable between the base and the cover, and a pressure member operably engaged with the cover and the cross members, the improvement comprising:

the frame having a low speed mode of operation below 600 linear feet per minute, the frame further including:

four elongate columns, each column having a first end and a second end, the first end of each column mounted to the base such that the columns are positioned parallel and spaced from one another, and the second end of each column mounted to the cover, each column defining a vertically extending length, the columns having a uniform cross section along the length between the base and the cover;

a die support kit operably engagable with the frame, the die support kit for low speed mode of operation consisting of a first modular die support and a second modular die support, the first modular die support having a first bearing and a second bearing positioned spaced from one another with respect to the first axis of rotation, each bearing mounted directly on the base in a location spaced from the columns, each bearing having at least two rollers, each roller having an axis of rotation substantially parallel to one another and angularly spaced from one another with respect to the first axis of rotation, the rollers in rolling engagement and maintaining the first rotary die in a stationary rotary position upwardly, horizontally transverse to the first axis of rotation and longitudinally along the first axis of rotation with respect to the base, the rollers in operable engagement with a raised radial flange on each of a first and a second end of the first rotary die to limit linear translation of the first rotary die along the first axis of rotation, and the second modular die support having a first bearing and a second bearing positioned spaced from one another with respect to the second axis of rotation, each bearing mounted to one of the cross members spaced from the columns in rolling engagement with the second rotary die.

14. (Cancelled)

15. The apparatus of claim 13 wherein the second die further comprises a first end and an opposite second end positioned axially inward of the raised radial flanges, each of the first and the second ends operably engagable with the adjacent radial flange of the first die to limit linear translation of the second die along the second axis of rotation.

16. The apparatus of claim 13 wherein the first and second bearing of the second modular die support comprise at least two rollers, each roller having an axis of rotation substantially parallel to one another and angularly spaced from one another with

respect to the second axis of rotation, the first and the second bearings in rolling engagement with and maintaining the second rotary die in a stationary rotary position in a horizontal direction transverse to the second axis of rotation.

Claims 17-39. (Cancelled)

40. (Withdrawn) A rotary die module for use with a first rotary die having a first axis of rotation and a second opposing rotary die having a second axis of rotation, the rotary die module comprising:

- a base;

- four parallel elongate rods having a first end and a second end defining a first axis of movement along a length thereof, the first ends of the rods mounted to the base, the rods spaced with respect to one another defining two pair of opposing rods with one pair of rods adjacent each end of the base, the second ends of the rods mounted to a cover, the rods having a uniform cross section along the length between the cover and the base;

- a pair of opposing cross members, each cross member positioned on one pair of rods and extending transverse to the first and second axis of rotation, each cross member movably engaged on the rods for movement along the first axis of movement;

- a first modular die support having a first bearing and a second bearing, the second bearing positioned spaced from the first bearing with respect to the first axis of rotation, each bearing having at least two rollers, each roller having an axis of rotation substantially parallel to one another and angularly spaced from one another with respect to the first axis of rotation, each bearing attached directly to the base spaced from the columns, the first die support providing exclusive support vertically, horizontally transverse to the first axis of rotation and longitudinally along the first axis of rotation through engagement with the first rotary die, the rollers of at least one of the first and second bearings operably engaging a shoulder defined by a raised radial flange on the first rotary die to limit linear longitudinal translation of the first rotary die along the first axis of rotation;

- a second modular die support having a first bearing and a second bearing, the second bearing positioned spaced from the first bearing with respect to the second axis of rotation, each bearing having at least two rollers, each roller having an axis of rotation

substantially parallel to one another and angularly spaced from one another with respect to the second axis of rotation, each bearing directly attached to one of the cross members spaced from the rods to receive and rotatably engage the second rotary die; and

a pressure member engaged with the cover and the cross members for controlling movement of the second modular die support along the first axis of movement.

Claims 41-49. (Cancelled).

50. A modular rotary die apparatus having a first rotary die with a first axis of rotation and a second rotary die with a second axis of rotation parallel to the first axis of rotation comprising:

a frame having a low speed mode of operation below 600 linear feet per minute, the frame including:

a base;

a plurality of independent elongate columns, each column having a first end and second end defining a path of travel along a length thereof, the first end of each column mounted to the base in spaced relation to one another;

a cross member engaged with at least two of the plurality of columns for movement of the entire cross member along the path of travel; and

a die support kit operably engagable with the frame, the die support kit for low speed mode of operation including:

a first modular die support for low speed mode of operation below 600 linear feet per minute, the first modular die support mounted to the base spaced from the columns in rolling engagement with the first rotary die, the first modular die support maintaining the first rotary die in a stationary rotary position with respect to the base; and

a second modular die support for low speed mode of operation mounted to the cross member spaced from the columns in rolling engagement with the second rotary die to maintain the second rotary die in a stationary rotary position in a horizontally transverse direction with respect to the second axis of rotation, wherein the each of the first and second modular die supports includes a first bearing assembly and a second bearing assembly positioned in longitudinally spaced locations along the axis of rotation of the first

and the second rotary dies, each of the first and the second bearings having at least two rollers with axes of rotation substantially parallel to one another and each roller angularly spaced from one another with respect to the axis of rotation of the corresponding rotary die, wherein the first rotary die includes a first end surface and an opposite second end surface, the first rotary die having a radially raised flange adjacent to the first and second end surfaces, the first and the second rollers operably engage the corresponding raised radial flange along the first axis of rotation to limit linear translation of the first rotary die along the first axis of rotation.

51. (Cancelled)

52. The modular die apparatus of claim 50 wherein the second rotary die includes a first end and a opposite second end positioned between and operably engaged with the raised radial flanges along the second axis of rotation to limit longitudinal translation of the second rotary die with respect to the first rotary die.

Claims 53-57. (Cancelled).

58. A modular rotary die apparatus having a first rotary die with a first axis of rotation and a second rotary die with a second axis of rotation parallel to the first axis of rotation comprising:

a frame having a low speed mode of operation below 600 linear feet per minute, the frame including:

a base;

a plurality of elongate columns having a first end mounted to the base and a second end;

a cross member positioned opposite the base operably engaged with at least two of the columns adjacent the second ends; and

a die support kit operably engagable with the frame, the die support kit for low speed mode of operation including:

a first modular die support mounted to the base spaced from the columns and consisting of a first bearing member and a second bearing member positioned in longitudinally spaced locations along the axis of rotation of the first rotary die, each bearing member including at least two rollers with axes of rotation located in angularly spaced positions with respect to and parallel to the axis of rotation of the first rotary die, the first and second bearing members in rolling engagement with the first rotary die and maintaining the first rotary die in a stationary rotary position with respect to the base through operable engagement of the rollers with raised radial flanges located on opposite longitudinal ends of the first rotary die; and

a second modular die support mounted to the cross member, the second modular die support consisting of a first bearing member and a second bearing member positioned in longitudinally spaced locations along the axis of rotation of the second rotary die, each bearing member including at least two rollers with axes of rotation located in angularly spaced positions with respect to and parallel to the axis of rotation of the second rotary die, the first and second bearing members in rolling engagement with the second rotary die and maintaining the second rotary die in a stationary rotary position with respect to the base through operable engagement of the raised radial flanges on the first rotary die with longitudinal ends of the second rotary die.

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EVIDENCE APPENDIX

37 C.F.R. §1.132 Declaration of William A. Cox	B2 - B6
Declaration Under 37 C.F.R. §1.132 (of Alan R. Pfaff, Jr.)	B7 - B16

Our Reference: CWL-101-A

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	William A. Cox
Serial Number:	09/863,181
Filing Date:	May 23, 2001
Examiner/Art Group Unit:	Peterson, Kenneth E./3724
Title:	ROTARY DIE MODULE

37 C.F.R. § 1.132 DECLARATION OF WILLIAM A. COX

I, William A. Cox, declare that:

1. I am the President and owner of the Cox Group, Inc. I have extensive experience in the die cutting industry, particularly, die cutting of thin, flexible materials and have worked in this industry for over 20 years.

2. I have reviewed the Examiner's March 6, 2003 Office Action Summary.

3. I have reviewed the Fawell Patent No. 661,470. Fawell discloses a rolling mill using thick, machined side plates called the housings (1) and uses cylindrical bushings and spacers to vertically support the rotary dies both laterally and linearly along the axis of rotation. These bushings, die supports and spacers require precision machined slots in the side plates or housings which are old in the art and continue to be used in more modern devices, for example U.S. Pat. No. 5,467,678 to Stollenwerk referred to by the Examiner and further discussed below.

4. The Fawell patent does not use die supports that are separated from the side plates or columns, but rather, rely on the support of the side plates/housings to anchor and restrain the die supports (cylindrical bushings or cylindrical roller bearings).

5. I disagree with the Examiner's conclusion in paragraph 4 of the Office Action Summary that it is only important for the columns to be uniform in cross section in the area where the cross members slide on them. I agree that the columns need to generally be uniform in the area where the cross members move on them, however, as explained in the present invention specification, significant benefits and advantages are achieved through use of off-the-shelf columns or rods that are uniform along their length to substantially reduce, if not eliminate, the amount of precision machining required in the Fawell and Stollenwerk patents, and prior art devices that I am aware of.

6. I am not aware of any other rotary die module which utilizes off-the-shelf elongate columns or rods which eliminate the heavy, machined side plates shown in Fawell and Stollenwerk. On that basis, I disagree that it would have been obvious to those skilled in the art to employ uniform, elongate rods as a simple matter of design choice.

7. I am not aware of another rotary die module that separates the columns from the die supports like the present invention.

8. I have reviewed Stollenwerk Patent No. 5,467,678. Stollenwerk discloses a device for applying equal pressure to the top roller of a rotary die device. From my experience, Stollenwerk would necessarily employ heavy, machined side plates and cylindrical roller bearings to support and restrain the rotary cutting dies similar to that in Fawell.

9. I disagree with the Examiner's conclusions in paragraph 5 of the Office Action Summary for two reasons. First, neither Fawell nor Stollenwerk use

individual or peripheral rollers to vertically support and permit rotation of the rotary dies. Both Fawell and Stollenwerk show use of die supports having individual precision machined side plates which receive and restrain the cylindrical bushings or cylindrical roller bearings in machined slots which receive journals extending from the roller dies. Second, from my experience, one skilled in the art would not simply replace the cylindrical roller bushings or bearings of Fawell and Stollenwerk with peripheral rollers 50 and 52 shown in Stollenwerk. The typical machined side plates are designed to accept bearing blocks housing the cylindrical roller bearings, and without significant modification, would not readily accept individual peripheral rollers similar to Stollenwerk to support and restrain the dies to meet typical performance requirements.

10. I am not aware of another rotary die module device that has die supports using cylindrical roller bearings that are separated from the side plates or columns as used in the present invention.

11. I have reviewed the Okuda Patent No. 4,155,240. Okuda shows a device for positioning and connecting drive spindles (1a, 1b) between rotary dies (8a, 8b) and a pinion stand (P). The device uses two pairs of vertical cylindrical posts (13) which are used as vertical guides for the spindles which are vertically adjusted to accommodate the vertical distance between the two rotary dies.

12. I disagree with the Examiner's conclusion in paragraph 6 that Okuda shows that it is well-known to vertically adjust rotary dies using cylindrical columns of uniform cross section. Okuda does not adjust rotary dies, rather, it vertically adjusts spindles that are attached at one end of the rotary dies. This is quite

different from my invention's use of rods or columns as a die frame to provide structure for the rotary die module. The columns or rods used in my invention are part of the rotary die framing structure. The use of uniform columns or rods, to the best of my knowledge and experience, is unique to this application which is different from the manner in which the posts of Okuda are employed and used.

13. It is also my opinion based on experience that one skilled in the art would not simply take the cylindrical posts of Okuda and use those posts in Stollenwerk or Pawell. As explained above, Pawell and Stollenwerk use machined side plates which receive and restrain the cylindrical roller bearings or bushings supporting the rotary dies. The posts of Okuda would have to be machined or otherwise modified to properly accept and restrain the cylindrical roller bearings as well as independent peripheral rollers.

14. I designed the rotary die module invention at my home which took in excess of 200 hours and \$16,000 dollars in time and materials.

15. To date, I have not advertised the rotary die module through mass mailings, industry or business publications, trade shows or an internet website.

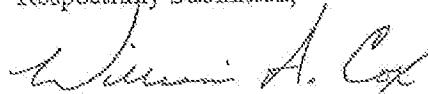
16. Without the benefit of advertising, I have sold 22 rotary die modules.

17. Following the first order for a single rotary die module, my customer subsequently ordered an additional 21 rotary die modules due to the substantial functional benefits and cost advantages over conventional dies previously used by the customer.

18. I have been contacted by three additional potential customers with interest in the rotary die module. To the best of my knowledge and belief, without the benefits of advertising, interest in my rotary die module has spread to at least these three additional customers by word of mouth.

19. In my experience, without advertising, the level of sales and interest in the rotary die module supports that my invention was not obvious to those skilled in the rotary die cutting field at the time the invention was made.

Respectfully Submitted,



William A. Cox

Dated: 22 April 2003

Our Reference: CWL-101-A

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: William A. Cox
 Serial Number: 09/863,181
 Filing Date: May 23, 2001
 Examiner/Art Group Unit: Peterson, Kenneth E./3724
 Title: ROTARY DIE MODULE

DECLARATION UNDER 37 C.F.R. 1.132

Commissioner for Patents
 PO Box 1450
 Alexandria, VA 22313-1450

Sir:

I, Alan R. Pfaff, Jr., do hereby declare that I make this declaration based on personal knowledge and am competent to testify on the matters herein.

1. My educational background includes three plus years at Michigan State University plus numerous continuing education courses and technical seminars, many of which were specific to rotary die manufacturing, cutting and cutting systems.

2. I am the founder and principal owner of Bernal Rotary Systems, Inc, Atlantic Eagle, Inc. and Eagle Rotary Systems Inc. I served as the president at Bernal for 20 years and as president and chairman of Atlantic Eagle for 5 years and

Eagle Rotary Systems for 2 years. These companies all specialized in the design and manufacture of rotary die cutting machines and related equipment.

3. I have over 35 years experience in the design and manufacture of rotary die machines and rotary cutting dies and tools.

4. I am a named inventor on an estimated 15 patents relating to rotary die cutting devices including:

a. U.S. Patent No. 6,178,852 for rotary die laser machining and hardening apparatus method.

b. U.S. Patent No. 5,575,185 for a method of making rotary cutting dies.

c. U.S. Patent No. 5,417,132 for rotary cutting dies.

5. I am presently a principal shareholder and president of Eagle Rotary Systems, Inc. a company specializing in the engineering and manufacturing of rotary dies and related equipment.

6. With my extensive experience in rotary cutting die design and manufacturing, and educational background, I believe that I am skilled in the art of rotary die equipment and consider myself to be an expert in this field of technology.

7. Inventor William Cox was formerly employed by Bernal Rotary Systems, Inc. and Atlantic Eagle, Inc. during the period that I owned those two companies.

8. I have no financial or other interest in Mr. Cox's Rotary Die Module invention (hereinafter "Rotary Die") and have no financial interest in the outcome of whether the application will be granted a patent. I have no formal affiliation or business relationship with Mr. Cox or his business The Cox Group, Inc.

9. I have reviewed the Rotary Die invention which I understand is the subject of U.S. Patent Application number 09/863,181 (hereinafter the "Patent Application").

10. I believe there are several aspects of the Rotary Die that I have not seen in the rotary die technology field and that I believe are important advancements.

11. The first advancement is the elimination of the need for heavy, precisely machined frame side plates to support and constrain the rotary die rolls from linear movement. I generally agree with the description of the need for heavy machined side plates in prior designs in the Rotary Die Background of the Invention section of the Patent Application. The Rotary Die uses rods or other common stock which, along with the individual roller bearings supporting the dies, requires little or no

machining in the areas directly adjacent the rollers as they are independent of the side frame.

12. The second advancement is the elimination of cylindrical roller bearings or bearing blocks which have been used with journals extending from the die rolls. I generally agree with the description of the need for bearing blocks in the prior designs in the Rotary Die Background of the Invention section of the Patent Application. The disclosed low speed version of the Rotary Die does not use cylindrical roller or sleeve bearings engaging die roll journals. Individual rollers are exclusively used as the die roll bearings.

13. In my experience, I have not personally seen and am not aware of a production rotary cutting device that does not use at least one cylindrical roller or sleeve bearing in combination with a die roll journal.

14. The third advancement, which is related to the first and second design having the advancements above, is the use of an annular flange or flanges on one or both of the die rolls to prevent linear movement of the die rolls along the rotational axis of the die rolls.

15. In my experience, prior designs have principally relied on cylindrical roller or sleeve bearings in combination with a machined side plate to control linear

movement of the die rolls in directions along the die roll axis of rotation and transverse to the die roll axis of rotation.

16. I have reviewed U.S. Patent number 4,770,078 for a Roll-Type Cutting/Scoring Apparatus by inventor Jean Gautier (hereinafter "Gautier").

17. Pertinent to the Patent Application, the '078 patent discloses a rotary die device having a frame 7 including a machined U-shaped channel on one side. Figure 4 (right side). The other side of the frame includes an open window design so sleeves or tubes 19 and 20 can axially pass through. Figure 5, column 3 lines 10-24.

18. The Gautier patent discloses use of two die rolls 1 and 2 which include expansible arbors and sleeves 19 and 20. Each die roll includes a stub shaft or journal 9 and 10 on the drive side (right hand side of the frame) which engage journal blocks or bearings 3 and 4. Figure 4, column 3 lines 10-24. The journal block bearings 3 and 4 which support the stub shafts are disclosed as being supported by the frame 7. Column 3 lines 19-24. In the absence of a separate elevational figure for the right side of the frame like that shown in figure 5, or a contrary description, I understand the disclosure of the relationship of these components on the right or drive side

to be that as illustrated in figure 2.

19. The Gautier patent discloses use of four individual rollers 13 underneath the lower die roll 2 and 4 individual rollers 16 above upper die roll 1. Figures 4 and 5, column 3 lines 25-54. The rollers 13 are described as engaging the outer peripheries of the die roll tube 20. Column 3 lines 25-30. Rollers 13 are described as receiving all of the downward vertical load from the die rolls which is transferred to the sole plate or cradle 12. Column 3 lines 30-34.

20. The Gautier patent describes two primary advantages of having this frame, journal block bearing and roller 13 construction. The first advantage is reduced vertical forces and wear on the journal blocks 3 and 4 due to the rollers 13 taking the vertical load. Under this construction, Gautier describes that the journal blocks 3 and 4 "primarily will be resisting horizontal forces perpendicular to the plane of the axis 1A and 2A. . . ." Column 3 lines 34-36. From the disclosure, it is my opinion that this "primary" resisting of horizontal forces by the journal blocks 3 and 4 can only come from restraint of the journal blocks by the machined side plate frame 7 as shown in figure 2.

21. The second stated principal advantage of this

particular frame and die roll construction is "the bearing 6 of the prior art system can be completely eliminated." Column 3 lines 36-37. From the Gautier description of the prior art designs requiring four journal blocks as shown in figures 1 and 2, I understand and it is my opinion that the elimination of two of the journal blocks 5 and 6 was considered an important advancement in the '078 invention.

22. As pertinent to the Patent Application, it is also my observation and opinion that the technical disclosure of the Gautier is limited to, or requires the use of, one set of journal block bearings 3 and 4 on the drive side to restrain linear movement of the die rolls transverse to the rotational axes. Gautier states the advantage of eliminating one set of the journal block bearings on the service or window side, but goes no further in explaining or suggesting a device that eliminates the other set of journal bearings 3 and 4 to provide for an open or window in the frame 7 on the drive side. It is my opinion that the Gautier device requires both the individual rollers 13 and 16 as well as the journal block bearings 3 and 4 and U-shaped frame as shown in figure 2 to support and restrain the die rolls 1 and 2 in their operational position.

23. It is also my observation and opinion that the

Gautier patent relies exclusively on the journal block bearings 3 and 4 and the U-shaped frame 7 to restrain the die rolls 1 and 2 from linear movement along the axis of rotation of the die rolls. Although brief mention is made of a drive mechanism, no description is provided for controlling movement in this direction other than the bearings 3 and 4 and frame 7.

24. I have also reviewed U.S. Patent number 4,452,116 for an Assembly for Rotary Die Cutting Utilizing a Shaftless Roll to inventor Kesten (hereafter the "Kesten" patent). Pertinent to the Patent Application, the Kesten patent discloses use of an anvil roll 12 that is mounted in a traditional heavy, machined side plate with bearing blocks 44 engaged with shafts or journals 42 on each end of the anvil. Figure 4, column lines 8-11. Kesten discloses a cutting die roll 16 without a shaft or journal. Kesten uses bearing assemblies 76 having cylindrical bearings 80 which include circumferential flanges 88. The bearing assemblies 76 and flanges 88 are used to provide "lateral stability" to the die-cutting roll 16. Figures 2 and 4, column 6 line 63 - column 7 line 14, column 7 lines 60-68.

25. As explained in paragraph 24 above, the Gautier patent exclusively uses journal bearing blocks 3 and 4 and

frame side plate 7 to constrain the die rolls 1 and 2 along the rotational axes. There is no explanation or suggestion in the Gautier patent to use a different method or to employ the use of an annular flange on one of the die rolls to restrain movement along the rotational axes. It is my observation and opinion that there is no need to add one or more circumferential flanges as shown in the Kesten patent to one or both of the die rolls in the Gautier patent for such a purpose. It is my opinion that an addition of the Kesten circumferential flange 88 to the Gautier die rolls would provide little or no benefit and only add costs and needless complexity to the device. Under these circumstances, it would not be obvious to me to add that Kesten feature to the Gautier device.

26. It is further my observation and opinion that the Kesten circumferential flanges 88 used for the purpose of lateral stability of the upper die roll 16 is a different linear control device as that as shown in the Patent Application. In figures 1, 2 and 6 of the Patent Application, the annular flange 122 serves a dual purpose not shown or explained in the Kesten patent. In the Patent Application, the annual flange 122, in combination with rollers 44 and 48, restrains both the lower die roll and at the same time, the upper die roll along the rotational

axes. This is not shown or described in the Kesten patent.

I declare that all statements made herein are of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the patent application or any patent thereon.

By: oe (P.H.)

Date: 1-5-07

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RELATED PROCEEDINGS APPENDIX

NONE

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